

# **PREPARATION AND SUBMISSION INSTRUCTIONS FOR Potential Commercialization of the Neutral Buoyancy Simulator (NBS), Located at MSFC**

## **0.0 General Information**

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The Neutral Buoyancy Simulator at Marshall Space Flight Center was officially closed for NASA's use on July 1, 1997. However, prior to and since its closing, the question of the commercial viability of the facility has been raised. In response to a Congressional and Agency request, MSFC issued an announcement in the Commerce Business Daily seeking industry commercialization plans. Once all submitted plans are reviewed and ranked by MSFC, the results will be forwarded to NASA/HQ for a final decision. Please note, the Government has no obligation to enter into an agreement and may reject all submitted commercialization plans. There are no appropriated funds available for this commercialization plan and if a selection is made, there will only be a single award. This submittal is open **ONLY** to domestic (USA) entities.

The National Aeronautics and Space Administration, Marshall Space Flight Center (NASA/MSFC) invites an organization, or group of organizations, to submit a written plan to reactivate and commercialize the NBS located at MSFC in Building 4705. The facility, a registered National Historic Landmark, has the capability, if reactivated, to simulate a highly controlled, weightless, underwater testing environment. The neutral buoyancy tank is 40 feet (12.2 meters) deep by 75 feet (22.9 meters) in diameter, with the capability to hold a constant 90° F (32.2° C) water temperature. The facility includes a three-person hyperbaric chamber, a control room from which tests may be monitored, an extensive underwater communications system, and a video monitoring/recording system with 12 color video cameras with the capability to record up to 13 video signals. The Facility also has the capability to transmit video and audio signals to remote locations for more extensive test monitoring. Costs to reactivate and operate the facility will be borne by the company or consortium.

A briefing concerning this potential commercialization opportunity was held at MSFC on Thursday January 22, 1998. Attendance at this MSFC briefing was not a prerequisite for submission of plans for reactivation and commercialization of the NBS.

The agreement vehicle for this potential commercialization opportunity will be a Fully Reimbursable Space Act Agreement. The enclosed Space Act Agreement template is provided as a suggested guideline for the NBS Commercialization Plan submitters. The actual agreement will be negotiated with the successful submitter.

The facility is a registered National Historic Landmark, and as such, the successful submitter must follow the rules governing modifications to registered landmarks.

## **1.0 Instructions for Submittal of Commercialization Plans**

The deadline for receipt of Commercialization Plans is 4:00 p.m. central time, Tuesday, March 24, 1998.

The original and 6 copies of the plan must be received by NASA/MSFC, Technology Transfer Office, Mail Code: LA01, Building 4201, Room 340, Marshall Space Flight Center, AL 35812, before the above deadline. Mark the envelope "NBS Commercialization."

The commercialization plan must be signed by authorized representatives of the participating organization, including any other party or partners. Plans submitted by facsimile or electronic mail **WILL NOT** be considered.

The submittal is to be organized in two separate parts - Narrative and Budget.

### **1.1 Content of Narrative**

The Narrative section should be based on the elements in 2.0 CRITERIA FOR SELECTION and include the following three sections:

Section 1-Executive Summary: The plan must begin with an executive summary of not more than two pages, summarizing the commercialization approach, and business and management plans.

Section 2-Body of the Plan: The body of the plan must give a detailed explanation of the commercialization approach, including business, management, and marketing plans. Section 2.0 CRITERIA FOR SELECTION, should be used as a guide for the elements the reviewers will be reviewing for each commercialization plan. Section 2.0 is broken down into 4 areas:

- 2.1-Technical Factors**
- 2.2-Business Factors**
- 2.3-Management Factors**
- 2.4-Economic Impact**

Each element in Section 2.0 should be addressed and a detailed explanation given. Any required design or research and development activities should be addressed. The total estimated office space needs should also be addressed in this section. Provide a brief statement of effort that describes the specific activities to be carried out, including a schedule of significant events. This section should also include a statement detailing any exceptions the submitter may have to the enclosed Space Act Agreement template and a Government rate in the event the facility is needed for testing.

Section 3-Appendices: Appendices should include personnel resumes, demonstration of support from third parties, history of commercialization activities, and other supporting documents. Participant must also include (1) a company profile providing the nature of company's business, (2) a history of new commercialized products in the past five years, and (3) Dunn and Bradstreet, Annual Report, 10K, or comparable audited report on the company.

## **1.2 Content of the Budget Section**

The Budget section must include the following two sections:

Section 1-Reimbursable Costs to MSFC: Utilizing the attached NASA/MSFC detail of reimbursable costs, develop a budget plan based on office space required, phone and computer connections, and consumables. Describe what is expected of MSFC in terms of chemicals and other expendables. Payment to MSFC will be made in advance of each quarter.

Section 2-Submitter Costs to Commercialize the Facility: A brief narrative description with a schedule and a summary of the submitter's funding requirements for the effort to support the submitter's business plan for the first 24 months.

## **1.3 Format and Page Layout of Commercialization Plan**

The commercialization plan must not exceed 20 single-spaced, 8 1/2 x 11-inch, single-sided pages, including cover sheet, table of contents, narrative, and budget plans. Any pages over the 20 page limit will **NOT** be considered in the review. All pages must be numbered, with the text body typed within one-inch margins. Font size must be 12 point or larger. The Dunn and Bradstreet, Annual Report, 10K, or comparable audited report, and the personnel resumes, will not be counted in the 20-page limitation.

The cover sheet should include (1) name and address of company or organization submitting the plan and (2) name, address, and phone number of a company employee for future contact.

## **2.0 CRITERIA FOR SELECTION**

Listed below are the evaluation criteria to be used in selecting a plan for the commercialization of the Neutral Buoyancy Simulator under this project. The evaluation process will be conducted by the NASA/MSFC Technology Transfer Office.

The commercialization plans will be evaluated on four primary criteria: Technical Factors, Business Factors, Management Factors, and Economic Impact. The criteria listed will be used as a guide in reviewing the submitters' plans. Examples of the types of information that will enter the decision process on each of the primary categories of criteria include the following:

### **2.1-Technical Factors**

- (1) Awareness of major technical challenges necessary to effect commercialization of the system.
- (2) Understanding of the technical requirements and availability of technical and engineering skills required to successfully commercialize the facility.
- (3) End use of the facility.

## **2.2-Business Factors**

- (1) Ability to develop the facility into a viable commercial product.
- (2) Goals of the project agree with proposing organization's overall mission and goals.
- (3) Demonstration of the strength of the company in the field of technology, financial condition of submitter, and ability to bring capital to the project.
- (4) Clear identification of existing and potential customers.
- (5) Awareness of the financial resources needed to successfully market the facility.
- (6) Amount of funding committed from partners (if any) and explanation of any support effort expected from MSFC.

## **2.3-Management Factors**

- (1) Leadership and high priority commitments of management to commercialize the facility.
- (2) Reasonableness, time factors, and required resources for the proposed effort.
- (3) Strengths and capabilities of the management team, including past experience and organizational approach.
- (4) Record of past successful and unsuccessful commercialization efforts.

## **2.4-Economic Impact**

- (1) Number and quality of jobs expected to be created.
- (2) Expected impact on the economy.

## **3.0 - REPORTS**

### **3.1-Submittal of Reports**

Quarterly project status reports will be required after initiation of the project. The report should be submitted within 1 month after the end of the quarter for the project and should contain a brief status of that quarter's projects, with forecasts and projected outcome for the next quarter.

The participant will be requested to provide MSFC Technology Transfer Office with a yearly assessment of the economic impact of the facility. This assessment will be included in the year-end quarterly project report.

## **4.0 -TERM OF THE AGREEMENT**

See the attached Space Act Agreement template.

**Reimbursable Cost Detail**  
**Potential Commercialization of the Neutral Buoyancy Simulator (NBS), Located at MSFC**

Element of Cost	Cost
<b>Required Services:</b>	
One-time Re-Activation Cost	\$ 13,000
Annual Operating Costs	
Utilities (steam, water, power)	\$ 79,000
General Maintenance (pumps, custodial, etc.)	\$ 21,200
Brick & Mortar	<u>\$ 33,900</u>
Total	<u>\$134,600</u>
<b>Optional Services:</b>	
Annual Additional Office Space (# of ft <sup>2</sup> x \$20/ft <sup>2</sup> )	\$
Phone/Computer Lines Installed (# of lines x \$1000/line)	\$
(One Time Cost)	
Annual Consumables (chemicals)	\$ 6,400
<b>First Year Total</b>	<b><u>\$158,000</u></b>
(Assuming no added office space, 2 phone and 2 computer lines, MSFC furnishing chemicals)	
<b>Second Year Total</b>	<b><u>\$141,000</u></b>
(Same assumptions as first year)	

In this area of the Section 1 budget sheet, summarize the office space required, phone and computer connections, and consumables, i.e., what is expected of MSFC in terms of chemicals and other expendables.

*Note:* This is the preferred format for Section 1 of the Budget Section. Section 2 format is left up to the submitter.

*Note: this document is provided as a guideline for the NBS Commercialization Plan submitters. The actual agreement will be negotiated with the successful submitter.*

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## **FULLY REIMBURSABLE SPACE ACT AGREEMENT**

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between

the National Aeronautics and Space Administration (NASA)  
represented by  
the George C. Marshall Space Flight Center (MSFC)  
Marshall Space Flight Center, Alabama 35812

and

[Entity Name] (hereinafter PARTICIPANT)  
at [Street Address]  
[City, State Zip]

for

Commercialization of the Neutral Buoyancy Simulator  
Located in Building 4705

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### Points of Contact

MSFC

[Participant]

Administrative:

[Mail Code/Name]  
[Phone/Fax]

Administrative:

[Mail Code/Name]  
[Phone/Fax]

Technical:

[Mail Code/Name]  
[Phone/Fax]

Technical:

[Mail Code/Name]  
[Phone/Fax]

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### Execution

Each of the parties has caused this Agreement (consisting of Sections [ ] and pages 1-[ ]) to be executed in duplicate originals by its duly authorized representative. This Agreement shall begin on the date the last party executes it and shall continue for 24 months.

MSFC

[Participant]

\_\_\_\_\_  
Signature  
[Name]  
[Title]

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature  
[Name]  
[Title]

\_\_\_\_\_  
Date

## SECTION I STATEMENT OF WORK

### A. Purpose: **TBD**

### B. Responsibilities of the Parties:

1. PARTICIPANT shall use reasonable efforts to (1) perform the following responsibilities and (2) adjust such responsibilities as necessary to accomplish the purpose of the Agreement without changing its scope.

- a. Provide all necessary equipment for a completely operational NBS facility in building 4705 at the Marshall Space Flight Center (MSFC). This responsibility shall include any necessary (1) transportation of equipment to building 4705 and (2) utility connections to the utility interfaces provided by MSFC. The Participant shall maintain ownership of the Participant-provided equipment.
- b. Maintaining and operating the NBS facility for the purpose of commercializing the NBS facility.
- c. Scheduling work for the NBS facility.
- d. Fully reimburse MSFC at the rate of \$ **TBD** per quarter with a start-up cost of \$**TBD**.
- e. Provide quarterly project status reports within 1 month after the end of the quarter for the project which contain a brief status of that quarter's projects with forecasts and projected outcomes for the next quarter.
- f. Provide a yearly assessment of the economic impact of the facility. This assessment is to be included in the year-end quarterly project report.

2. MSFC shall use reasonable efforts to (1) perform the following responsibilities and (2) adjust such responsibilities as necessary to accomplish the purpose of the Agreement without changing its scope.

- a. Provide and maintain conditioned space in the Neutral Buoyancy Simulator (NBS) at the Marshall Space Flight Center (MSFC), including the tank high-bay and the control room.
- b. Provide conditioned office space in reasonable proximity to the NBS for **TBD** Participant employees who will have the responsibility of maintaining and operating the NBS facility, Building 4705.
- c. Providing all necessary utility interfaces at appropriate locations for operating the NBS facility.
- d. Provide all necessary consumable items for the maintenance of the NBS facility.
- e. Provide janitorial service, security, and brick-and-mortar maintenance for the facility.

3. PARTICIPANT and MSFC shall use reasonable efforts to (1) perform the following responsibilities and (2) adjust such responsibilities as necessary to accomplish the purpose of the Agreement without changing its scope.

- a. **TBD** (if necessary)

C. Schedule:

**TBD**



## SECTION II FINANCIAL PROVISIONS

A. **General:** Since this Agreement is fully reimbursable, the PARTICIPANT agrees to reimburse MSFC for all resources that are utilized in carrying out MSFC's responsibilities under this Agreement. However, this Agreement does not obligate any appropriated funds. Furthermore, the ability of MSFC to perform its responsibilities under this Agreement may be subject to the availability of appropriated funds, and no provision in this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341.

B. **Limitation of MSFC Resources:** In accordance with MMI 1050.11A, MSFC cannot commit MSFC resources under this Agreement that exceed \$10 million. Consequently, the parties agree that the commitment of MSFC resources shall not exceed this limitation.

C. **Financial Arrangements:**

1. **Estimated MSFC Resources:** The estimated cost for MSFC to complete its responsibilities under this Agreement is **\$TBD**. This estimate is based on MSFC conducting its responsibilities during fiscal years 1998, 1999, and 2000.

2. **Advanced Payments:** All resources expended by MSFC under this Agreement shall be paid for in advance by the PARTICIPANT.

Consequently, the PARTICIPANT shall make an initial payment of **\$TBD** 30 days before MSFC starts work under this Agreement with subsequent quarterly payments of **\$TBD** due 30 days prior to the beginning of each quarter.

Whenever MSFC's costs are expected to exceed the funds paid in advance by the PARTICIPANT, MSFC shall notify the PARTICIPANT so that appropriate adjustments can be made. MSFC shall have no obligation to perform work under this Agreement where MSFC's costs exceed the funds previously paid in advance by the PARTICIPANT.

All payments shall be clearly associated with this Agreement, Commercialization of the Neutral Buoyancy Simulator Located in Building 4705, and marked for "LA01/(205) 544-4266." Checks shall be made payable to the National Aeronautics and Space Administration and sent to:

National Aeronautics and Space Administration  
George C. Marshall Space Flight Center  
Financial Management Office, BF20  
Marshall Space Flight Center, Alabama 35812

3. **Final Reconciliation:** While MSFC expects to collect payment for all of its reimbursable costs, MSFC cannot collect funds in excess of its reimbursable costs. Consequently, upon completion or termination of activities under this Agreement, MSFC shall promptly send a final reconciliation statement to the PARTICIPANT. The statement will reconcile all of MSFC's costs against all of the payments received by the PARTICIPANT. If MSFC's costs exceed the PARTICIPANT's payments, the PARTICIPANT agrees to pay the difference to MSFC within 60 days of the statement date. If the PARTICIPANT's payments exceed MSFC's costs, MSFC shall refund the difference as directed by the PARTICIPANT within 60 days of the statement date.

### SECTION III AGREEMENT PROVISIONS

A. Authority: The National Aeronautics and Space Act of 1958, specifically 42 U.S.C. § 2473(c)(5), provides the authority for MSFC to enter into this Agreement.

B. Definition: PARTICIPANT means any non-U.S. Government entity that is a party to this Agreement.

C. Priority of Use: The parties agree that MSFC shall have sole discretion to prioritize and reschedule the use of MSFC resources (i.e., manpower, facilities, and equipment) throughout the term of this Agreement. In addition, MSFC facilities and equipment are provided on an "as is" basis. The Schedule in Section I of this Agreement is based upon the parties' current understanding of the projected availability of MSFC resources. In the event MSFC's projected availability changes, the PARTICIPANT shall be given expeditious notice of the change so that the Schedule may be adjusted accordingly.

D. Liability and Risk of Loss:

1. General: In consideration of the use of NASA research facilities, equipment, and/or services provided by NASA or NASA contractors under this Agreement, the PARTICIPANT (including its contractors, partners, and/or related entities) waive and agree not to make any claims against the U.S. Government or the U.S. Government's related entities (e.g., contractors, subcontractors) for damage arising from or related to activities under this Agreement, whether such damage is caused by negligence or otherwise, except in the case of willful misconduct.

2. Indemnification: The PARTICIPANT agrees to indemnify and hold the U.S. Government or the U.S. Government contractors or subcontractors harmless from any claim, judgment, or cost arising from the injury to or death of any person, or for damage to or loss of any property, including U.S. Government property, as a result of activities under this Agreement whether such damage is caused by negligence or otherwise, except in the case of willful misconduct.

3. Facility Damage: The PARTICIPANT assumes responsibility for any facility/equipment damage resulting from this activity and agrees to pay all costs associated with the repair of such damage. Facility/equipment damage as used herein refers to any damage to NASA facilities/equipment beyond the normal wear and tear reasonably to be expected as arising from the type of activity contemplated under this Agreement.

4. Direct Damage Limitation: To the extent that a risk of damage or loss is not dealt with expressly in this Agreement, each Party's liability to the other party arising out of this Agreement, whether or not arising as a result of an alleged breach of this Agreement, shall be limited to direct damages only, and shall not include any loss of revenue or profits or other indirect or consequential damages.

E. Intellectual Property:

1. Rights in Data: The rights in data set forth herein are applicable to employees, contractors or subcontractors, or other entities having a fiduciary or contractual relationship with PARTICIPANT that are assigned, tasked, or contracted with to perform specified PARTICIPANT activities under this Agreement.

a. Definition: The term "data," as used herein, means recorded information, regardless of form, the media on which it may be recorded, or the method of recording. The term

includes, but is not limited to, data of a scientific or technical nature, computer software and documentation thereof, and data comprising commercial and financial information.

b. General: Data exchanged between NASA and PARTICIPANT under this Agreement will be exchanged without restriction as to its disclosure, use, or duplication except as otherwise provided below in this provision.

c. PARTICIPANT Produced Data: In the event it is necessary for PARTICIPANT to furnish NASA with data which either existed prior to, was produced outside of, or is first produced by PARTICIPANT in carrying out PARTICIPANT's responsibilities under this Agreement, and provided such data embodies trade secrets or comprises commercial or financial information which is privileged or confidential and is so identified with a suitable notice or legend, the data will be maintained in confidence and disclosed and used by NASA and its contractors (under suitable protective conditions) only for the purpose of carrying out NASA's responsibilities under this Agreement. Upon completion of activities under this Agreement, such data will be disposed of as requested by PARTICIPANT.

d. Data First Produced by NASA: As to data first produced by NASA in carrying out NASA's responsibilities under this Agreement and which data would embody trade secrets or would comprise commercial or financial information that is privileged or confidential if obtained from PARTICIPANT, such data will, upon timely and specific identification and request by PARTICIPANT, and to the extent permitted by law, be maintained in confidence and disclosed and used by NASA and its contractors (under suitable protective conditions) only for the purpose of carrying out NASA's responsibilities under this Agreement. Upon completion of activities under this Agreement, such data will be disposed of as requested by PARTICIPANT.

2. Patent and Invention Rights: The patent and invention rights set forth herein are applicable to employees, contractors or subcontractors, or other entities having a fiduciary or contractual relationship with PARTICIPANT that are assigned, tasked, or contracted with to perform specified PARTICIPANT activities under this Agreement.

Title to inventions made (conceived or first actually reduced to practice) as a consequence of, or in direct relation to, the performance of activities under this Agreement will remain with the respective inventing parties (PARTICIPANT or NASA), and no patent or invention rights are exchanged between or granted by such parties under this Agreement except that, NASA and the PARTICIPANT agree to use reasonable efforts to identify and report to each other any invention which is believed to have been made jointly by employees of the PARTICIPANT and employees of NASA (including employees of NASA contractors), and to consult and agree as to the responsibilities and costs of actions to be taken to establish and maintain patent protection (in any country) on such invention and on the terms and conditions of any license or other rights to be exchanged or granted by or between NASA and the PARTICIPANT.

F. Facility Access:

1. Hours: Unless expressly provided otherwise in this Agreement, access to and use of MSFC equipment and facilities shall be during normal duty hours (i.e., 8 a.m. to 4:30 p.m. Monday through Friday).

2. Eligible Parties: Unless expressly provided otherwise in this Agreement, access to and use of MSFC equipment and facilities shall be restricted to U.S. Citizens and resident aliens.

G. Applicable Law:

1. The parties shall comply with all applicable laws and regulations while conducting activities under this Agreement.
2. This Agreement shall be construed, interpreted, and applied in accordance with Federal law of the United States.

H. Term and Termination:

1. This Agreement shall automatically terminate either (1) after expiration of the period noted on the front page of this Agreement or (2) after all obligations of all the parties have been completed, whichever comes first. Under no circumstances shall this Agreement, including any options or extensions, exceed 2 years in duration.
2. A party, upon a 90-day written notice to each other party, may terminate this Agreement at any time for any reason without liability. In the event of such termination, all data shall be returned to the originating party. However, a party may retain any data generated by its partial performance under the Agreement unless provided otherwise in the Intellectual Property section of this Agreement. Also, in the event of termination by either party, the PARTICIPANT shall continue to be liable for reimbursable costs incurred by MSFC up to the date of termination. At the termination of this Agreement, MSFC and the Participant agree to enter into negotiations to renew this agreement if such extension is in the best interest of both parties.

I. Independence of Contracts:

1. The parties agree that this Agreement is independent of any contract, grant, cooperative agreement, or other transaction between NASA and the PARTICIPANT. Consequently, this Agreement does not relieve the PARTICIPANT of any obligations under such contracts, grants, cooperative agreements, or other transactions.
2. By participating in this Agreement, NASA makes no assurances to the PARTICIPANT or others pertaining to the performance of the objects tested in NASA facilities or other test objects. Furthermore, this Agreement does not constitute NASA's endorsement of any test results, resulting designs, hardware, or other matters.

J. Agreement Modification: Modifications to this Agreement requiring no additional time or MSFC resources shall be in writing and signed by the respective administrative points-of-contact. Extensions of time or modifications requiring additional MSFC resources shall be in writing and signed by the original signatories or their successors.